

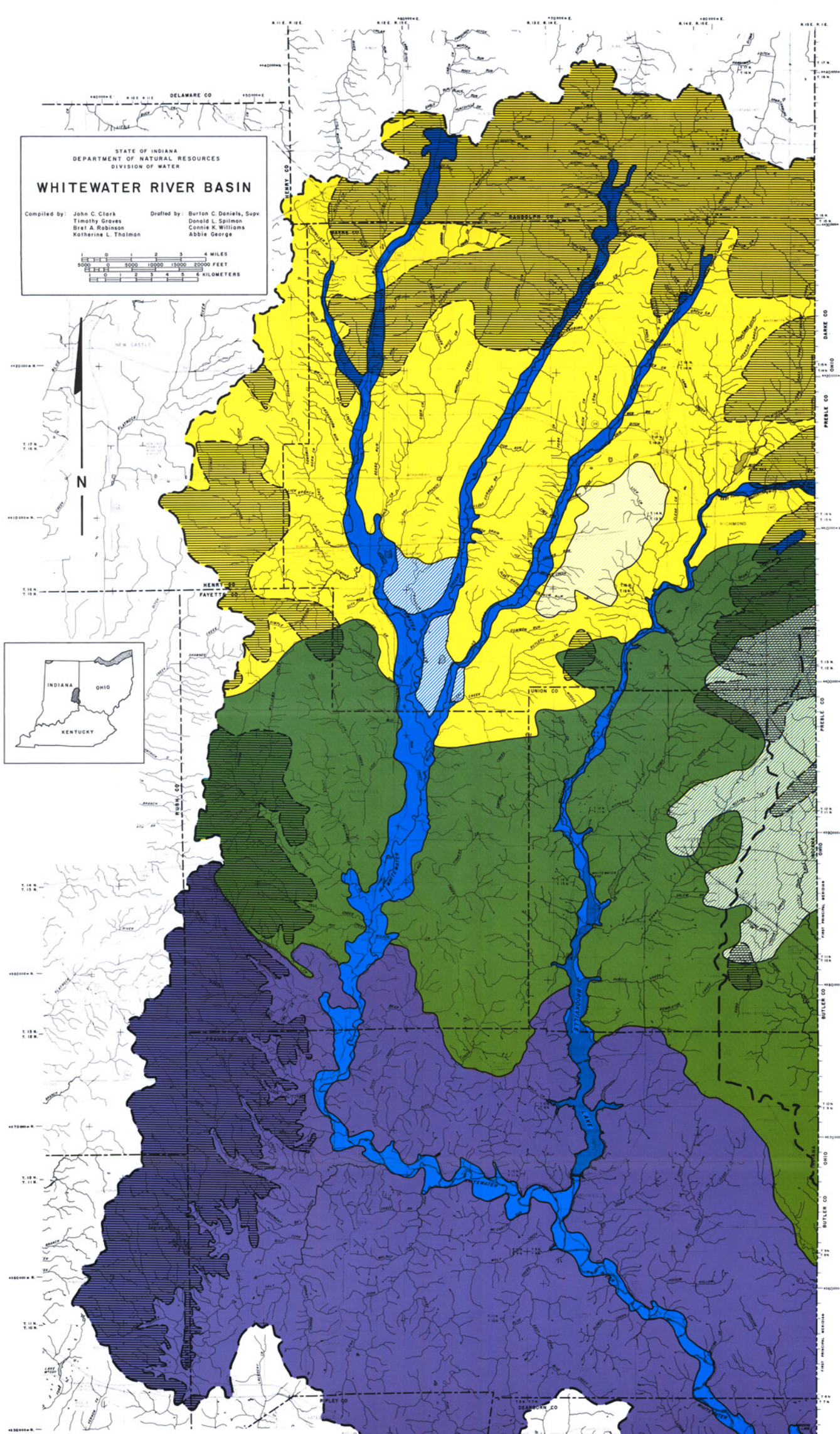
STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER

WHITWATER RIVER BASIN

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0 1 2 3 4 MILES
0 5000 10000 15000 20000 FEET
0 1 2 3 4 5 6 KILOMETERS



WAYNE-HENRY AQUIFER SYSTEM

This intratill aquifer system is characterized by thin sand and gravel aquifer zones contained within variably thick till sequences. The thickness of the system ranges from 30 feet or less over areas of high bedrock to 300 feet or more in buried bedrock valleys. The productive aquifer zones within the system are usually less than 10 feet thick. The ground-water availability of this system is generally adequate for domestic supply purposes. Reported well yields range from 0 to 150 gpm. Most domestic wells produce 15 gpm or less and high-capacity wells (70 gpm or greater) are fairly uncommon. Because sand and gravel lenses in the Wayne-Henry System are usually overlain by significant clay or till zones, the lenses are not very susceptible to contamination from surface sources.

CENTERVILLE SUBSYSTEM

This subsystem consists of an intratill sand and gravel zone and differs from the main system only because it is fairly extensive and mappable as an individual unit. This zone ranges in thickness up to 25 feet but is usually about 5 feet thick. Wells yield between 6 and 30 gpm with most wells producing at least 10 gpm.

FAYETTE-UNION AQUIFER SYSTEM

The Fayette-Union Aquifer System is mainly composed of glacial tills which contain intratill sand and gravel aquifers of limited thickness and extent. Intratill sand and gravel lenses average about 2 to 4 feet in thickness; however, in many areas these lenses are absent. Wells drilled in this system produce from 0 to 60 gpm; however, most wells average only 2 to 3 gpm. Bucket-rig wells, which draw water from thin sand zones or from seepage from fractures within the till, are frequently used. The aquifer system is only slightly susceptible to ground-water contamination because most buried sand and gravel lenses are overlain by significant thicknesses of clay.

LIBERTY SUBSYSTEM

This subsystem of the Fayette-Union Aquifer System was identified because of the more frequent occurrence of significant sand and gravel aquifers. Sand and gravel lenses average about 4 feet in thickness and drilled wells usually yield about 10 gpm. Bucket-rig wells are less common than in the main Fayette-Union System due to the presence of thicker, more productive sand and gravel layers.

DEARBORN AQUIFER SYSTEM

This system consists of thin, eroded residuum and predominantly pre-Wisconsinan till overlying bedrock in southern portions of the basin. Significant sand and gravel zones are usually absent but thicknesses up to 15 feet have been reported. Water availability is generally poor although bucket-rig wells may produce water from thin sand or gravel units. Reported well yields range from 0 to 20 gpm but most wells produce only a few gpm and dry holes are fairly common. Because of the low permeability of the surface materials, this system is not very susceptible to contamination from surface sources.

WHITWATER VALLEY AQUIFER SYSTEM

The Whitwater System is composed of sand and gravel, most of which was deposited as valley fill material during periods of glacial retreat. Only in a few cases have wells extended to the bottom of the outwash aquifer. Records for these wells show that in some areas till is below the outwash whereas in other areas the outwash has been deposited directly on top of bedrock. The Whitwater Valley Aquifer System ranges from less than 10 feet to more than 100 feet in thickness. Numerous high-capacity industrial and municipal wells obtain water from this system. This aquifer system represents an area of excellent ground-water potential (50-1200 gpm); however, due to its lack of clay layers and shallow water levels it is highly susceptible to contamination.

In these areas of the Whitwater Valley Aquifer System, the outwash sands and gravels have been covered by a layer of clay or till. Sand and gravel zones of 20 to 30 feet are common with reported well yields ranging from 10 to 140 gpm. Aquifer zones in these areas are less susceptible to contamination from surface sources than other areas of the Whitwater Valley Aquifer System.

ORDOVICIAN BEDROCK AQUIFER SYSTEM

This system is characterized by multiple layers of Ordovician-age limestone and shale. Wells developed in this system penetrate from 10 to 100 feet into bedrock. The productivity of wells in this system does not appear to be significantly correlated with the amount of bedrock penetration, however. Ground-water availability in this system is generally poor. Well yields of 0 to 50 gpm have been reported. Many wells yield between 2 and 6 gpm; however, dry holes are fairly common.

SILURIAN BEDROCK AQUIFER SYSTEM

This system consists primarily of Silurian-age limestone with minor amounts of shale. Most wells producing from this system penetrate 30 feet or less into bedrock. Ground-water potential in this system is generally marginal with reported well yields of 0 to 60 gpm. Potential yields from this system are greatest to the north, commonly 30 gpm or greater, and decrease to the south. Yields also decrease near the Silurian-Ordovician boundary where yields are usually 10 gpm or less and dry holes are occasionally reported.

UNCONSOLIDATED AND BEDROCK AQUIFER SYSTEMS